Remarks

Preliminary Matters

Claims 1-45 are presented for reconsideration. Claims 1, 14 and 28 have been amended. No new matter has been introduced. Reconsideration is respectfully requested.

Applicant thanks Examiner Silver for the courtesy of a telephone interview held 10 June 2009 with Applicant's representative, Daniel Kligler (Reg. No. 41,120). At the interview, Dr. Kligler presented a proposed amendment to claim 1 and argued the patentability of the claims over the cited art (Bugnion and Nickel), but no agreement was reached.

Rejections Under 35 U.S.C. § 103

Claims 1-9, 11, 13-23, 25, 27-34, and 36-45 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Bugnion (U.S. Patent 6,075,938) and Bugnion, *Disco: Running Commodity Operating Systems on Scalable Multiprocessors* (hereinafter: "Disco") in view of Nickel (U.S. Patent Application Publication 2003/0005068). While disagreeing with the grounds of the rejection, Applicant has amended independent claims 1, 14, and 28 in order to further emphasize the distinction of the claimed invention over the cited art. The amended claims simply reorder certain elements of the previous claim language.

Claims 1, 14 and 28 recite a method, software product and system in which at least first and second virtual machine implementers run respectively on first and second computers separately and independently of one another. A <u>virtual machine</u>

is shared between the virtual machine implementers, and a guest operating system runs over the shared virtual machine.

By contrast, Bugnion, in both the '938 patent and in "Disco," describes a single virtual machine monitor (VMM), which runs on a single computer (a shared memory multiprocessor). The Examiner acknowledged in the Official Action that the Bugnion references do not teach the feature recited in claim 1 that the "first and second virtual machine implementers run separately and independently of one another on said first and second computers," and instead relied on Nickel for the missing teaching.

Nickel describes a "virtual supercomputer" for solving a computationally-intensive problem using a "plurality of multipurpose workstations" (abstract). The "virtual supercomputer" uses a "Parallel Virtual Machine (PVM)" software package, or other, similar software application (paragraph 0006). The operation of the PVM is described as follows (paragraphs 0016-0017):

"The formation of the supercomputer is initiated by executing the PVM master software on the master computer. The master computer will form a supercomputer by establishing connections with as many other computers as possible… The participating computers are preferably ordinary multipurpose computers configured with the Windows NT/2000 operating system… All that is required to make a Windows NT/2000 computer capable of participating in supercomputing according to the present invention are a few simple changes to the Windows NT/2000 Registry and the installation of remote-shell software."

As can be seen in Nickel's Figs. 1B and 1C, the master and slave computers each run their own operating system and application program, with a PVM daemon controlling the communication channels between the computers (paragraph 0039).

Nickel's "virtual supercomputer," in other words, operates at a very different level from the virtual machines described by Bugnion and by the present patent application. Nickel's system runs at the application level, over ordinary native operating systems running on each participating computer. He has nothing that even approximates a virtual machine implementer or virtual machine monitor, let alone a virtual machine running over such implementers, or a guest operating system running over the virtual machine.

Therefore, <u>a person of ordinary skill in the art would not even have considered combining Nickel with Bugnion</u>. Moreover, Nickel and Bugnion, whether taken individually or in combination, contain no teaching or suggestion of running a <u>guest operating system over a shared virtual machine, which is supported by multiple virtual machine implementers, running separately and independently of one another on different computers</u>. Thus, the combined teachings of Nickel and Bugnion, without the benefit of hindsight from the present patent application, would not have led the person of ordinary skill even to conceive the invention of claims 1, 14 and 28, and would certainly not have provided the complex technical solutions needed to reduce the invention to practice.

In support of these points, Applicant submits herewith a Declaration under 37 CFR 1.132 by Dr. Joseph Landman, a well-

known expert in the field of high-performance computing. The Declaration explains in greater technical detail why the references that the Examiner has cited against the claims in the Application could not have led a person of ordinary skill in the art to make the claimed invention.

Dr. Landman's Declaration goes on to point out that the invention defined by the claims in the present patent application, embodied in the vSMP product sold by ScaleMP (the assignee of the application), answers a market need that could not be satisfied by prior art solutions, has been enthusiastically received by market leaders and customers, and has recently been copied by a competing company. These points are supported by Exhibits attached to the Declaration.

As further proof of the non-obviousness of the claimed invention, Applicant submits herewith an additional Declaration under 37 CFR 1.132 by Mr. Boaz Yehuda, an experienced market executive who has first-hand familiarity with the vSMP product. This Declaration explains the long-felt need that has been satisfied by vSMP and the unexpected results achieved by the product.

Based on the secondary considerations explained by the attached Declarations, the invention recited in the claims of the present patent application is objectively non-obvious, notwithstanding the arguments above regarding the cited art.

To summarize, the <u>Examiner has failed to make a case of *prima facie* obviousness</u> against the claims in the present patent application, and <u>such a case would in any event be outweighed by the objective evidence of non-obviousness</u> that is presented in

the Declarations. Therefore, independent claims 1, 14 and 28, as amended, are patentable over the cited art. In view of the patentability of the independent claims, dependent claims 2-9, 11, 13-23, 25, 27-34, and 36-42 are also believed to be patentable.
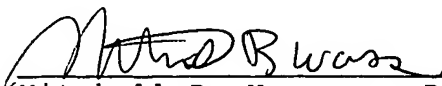
Dependent claims 10, 12, 24, 26, and 35 were rejected under 35 U.S.C. § 103(a) as being unpatentable over the above-cited references and further in view of Official Notice taken. In light of the patentability of independent claims 1, 14 and 28, as amended, dependent claims 10, 12, 24, 26, and 35 are believed to be patentable at least because they depend from an allowable base claim. Furthermore, Applicant properly traversed the Official Notice taken by the Examiner in response to an earlier Official Action in this case. Applicant will reserve further argument on this matter, however, in the interest of expediting prosecution.

Concluding Matters

It is believed that the amendments and remarks presented hereinabove are fully responsive to all the grounds of rejection raised by the Examiner, and that the Application is now in order for allowance.

Applicant thanks the Examiner for his thorough consideration of the Application and appreciates the careful analysis of the art cited therein.

Respectfully submitted,

Mitchell B. Wasson - Reg. 27,408
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